



UPCYCLED CERTIFICATION STANDARD

VERSION 1

Developed and drafted by the
Upycled Certification Standards
Committee

The Upcycled Food Association is a nonprofit focused on reducing food waste by growing the upcycled food economy. Through policy, marketing, and communications work, the Upcycled Food Association is building a food system in which all food goes to its highest and best use.

To learn more, visit www.upcycledfood.org

The Upcycled Certification Standard is subject to revision.
Questions, clarification, interpretations, and suggested revisions to the Standard may be provided in writing via the feedback portal at:

<https://www.upcycledfood.org>

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Introduction: Our Urgent Need to Upcycle Food

History may remember 2020 most for the COVID-19 coronavirus, but it has also been a year of unprecedented environmental turmoil: record-breaking heat, fires, hurricanes, and other acute consequences of global climate change. “Climate Chaos” may in fact be a more apt moniker, as this is a multi-dimensional calamity caused by a confluence of consequences wreaked in the wake of human behavior.

While we most often conjure visuals of pollution and overpopulation to represent this reality, our food system is more impactful than many realize. The work by leading research institution Project Drawdown¹ evaluates and ranks solutions for addressing changing climate, and their recent finds are clear. Food waste is one of the most pressing environmental issues. According to their findings¹, if we are to reach Drawdown, or “the point in the future when levels of greenhouse gases in the atmosphere stop climbing and start to steadily decline,” and if we are to do this by the year 2050 without exceeding a 2°C increase in our global temperature, then food waste reduction is the climate change solution that, if scaled up, would have the largest emissions impact globally.

As humans, we have to eat to survive, but exactly what and how is up to us. More than 40% of food² grown each year goes to waste and with it also associated water, energy, labor, and nutritional value. In the United States alone, ReFED³, a leading food waste research organization, estimates that 62.5 million tons of food are lost annually, the equivalent of 28% of agricultural land, which accounts for roughly 8% of total greenhouse gas emissions. Put in other terms, if food waste were measured as a country, it would be the third worst greenhouse gas offender after the U.S. and China.

We can do better! Putting nutritious delicious food to its best use—feeding people—is the Upcycled Food movement’s part of the solution. Food waste statistics, while staggering, fail to measure the billions of pounds of edible and nutritious food that are the mission of Upcycled Food. Consider this: one pound of apples that never makes it to the grocery store because of cosmetic imperfections is measured as food waste, as one would expect. However, one pound of brewer’s malt, that has had its sugars extracted to produce a single six-pack of beer but retains high levels of nutrients, is not measured. Yet, over 300 gallons of water went into cultivating and processing that malt, compared with 100 gallons for the apple⁴—not to mention the other natural, human, and financial resources expended. By letting this grain go to uses below human consumption, are we not wasting food? This is just one example of the cracks that exist in the foundation of our food system that Upcycled Food addresses.

Tens of billions of pounds of brewers’ so-called “spent” grain is generated in the United States alone, and this is just one of many supply chains currently being left off our collective table. There is also okara, the nutritious soy created with every batch of tofu and non-dairy milk. Plus the fruit and vegetable pressings left from juice. The fruits of the coffee and cacao plants that are rich in antioxidants and beneficial compounds but discarded in the production process. Byproducts are unavoidable in food processing. But, what if, instead of just arbitrarily labeling them as waste, we reimagined each as a valuable co-product instead?

A timeless business adage states “what isn’t measured isn’t managed.” The Upcycled Food Movement seeks to support a food system that does more with less by closing the loop on these potential ingredients by defining, measuring, and ultimately marketing them for “best” use. The Upcycled Food Association (UFA) was formed as a member-based industry non-profit association to support this vision by developing the market for Upcycled Foods and the direct potential for upcycled foods to contribute to food waste reduction. The UFA was founded in 2019 by upcycled food pioneers, who recognized the power of collaboration in growing a successful new product category and environmental movement. Through research, strategy, networking, and policy advocacy on a global scale, UFA is building a food system in which all food is elevated to its highest and best use.

Soon after its founding, the UFA realized that a formal definition of upcycled food would be foundational to the movement. Under the UFA’s leadership, a group of cross-sectoral stakeholders came together in early 2020 to craft the first official definition of “upcycled food” with representatives from Harvard University⁵, Drexel University⁵, Natural Resources Defense Council⁵, World Wildlife Fund⁵, and ReFED⁵. The working group released the following definition:

Upcycled Foods “use ingredients that otherwise would not have gone to human consumption, are procured and produced using verifiable supply chains, and have a positive impact on the environment.”⁵”

In some ways, “Upcycled Food” is ancient wisdom repackaged with a trendy rebrand. After all, waste is money, and it has always made both dollars and “sense” for producers to do more with less. In practice, this is why we have broth (from bones), “baby” carrots (from full size carrots too ugly to sell as is), whey protein (cheese byproduct), and more. Somewhere along the way though, the system got inverted. Instead of canning tomatoes to preserve their shelf-life, we started growing tomatoes specifically for the purpose of canning. Now there are dairy processors whose primary product is protein powder, and whose byproduct is cheese. At the same time, as the food system increasingly industrialized, we have grown accustomed to accepting the path of least resistance for managing “waste” streams instead of optimizing each for their highest usage opportunity.

Upcycled Food disrupts this pattern by deploying innovative processing solutions and culinary creativity to craft a new frontier of “better for you and the planet” food ingredients and products. Upcycled Food and products using upcycled ingredients have the potential to be present in every aisle of the grocery store, on every restaurant menu, and in the pantries and cupboards of each home. However, the term also has the potential to be co-opted by opportunists and diluted beyond meaning.

An Upcycled Certification, administered against a set of rigorous standards built upon the principles of the definition, is the logical next step. Drawing from the precedents offered by Organic⁶, Non-GMO⁷, Regenerative⁸, Fair Trade⁹, and others, the Upcycled Certification will create a trusted standard of identity. This is critical because consumers are already signaling that they care about reducing food waste and want to buy more upcycled food. Leading product development firm Mattson¹⁰ released data indicating that 57% of consumers are actively looking to purchase more upcycled foods. A certifiable standard will support these consumers as they seek to fill their shopping carts with products that will not only nourish themselves and their communities, but also the planet.

The Upcycled Certification Standards Committee is composed of international experts in sustainability, agriculture, food systems, nutrition, food purchasing, and retail. The committee’s process included a deep dive into how the pioneers of the movement are working to incorporate upcycled ingredients in products throughout the grocery store aisles today. This Standard lays out criteria and methods for ensuring products bearing the certification have transparent and auditable supply chains and contribute to a reduction in food waste. It also starts the Upcycled Food Movement on a path to demonstrating that those ingredients and products have a positive effect on the environment. The landmark Standard will serve as a baseline, subject to improvement as our ability to measure the environmental and social outcomes from upcycling activities evolve.

As the climate crisis only continues to intensify, we as food producers have an imperative to embrace solutions like upcycling and to educate consumers on using their daily decisions to drive this change. Together we can disrupt the old ways and forge a new path to create a better, more resilient food system for all. Someday, “upcycled” food will be as universally recognizable and valued as the certifications that have laid the road before it. The Upcycled Certification is the first step in this direction to secure the transparency and trust needed.

Onward and UPward,

Daniel Kurzrock (ReGrained)
Caroline Cotto (Renewal Mill)
Sue Marshall (NETZRO)

Upcycled Food Association Founding Members and Officers

Upcycled Certification Standard

1. Overview

1.1 Purpose

The purpose of the Upcycled Certification Standard (the Standard) is to establish rigorous certification criteria in order to develop markets for Upcycled Foods and other products which use inputs originally produced for use in human food that otherwise would not have gone to human consumption, are procured and produced using verifiable supply chains, and have a positive impact on the environment.

The Upcycled Certification:

- 1) Communicates to consumers a consistent message regarding the criteria for and value of these distinct products.
- 2) Creates a common identity for the upcycling movement.
- 3) Serves to communicate transparency, aiming to build trust and enthusiasm about consuming food that would have otherwise been lost or wasted.

The Certification helps upcycled ingredient and product manufacturers:

- 1) Identify suppliers that support the Upcycled Food industry's mission to address climate change.
- 2) Feed a growing population by reducing the amount of food loss and waste throughout the food system.
- 3) Have a mechanism to account for environmental impact.

1.2 Scope

The Standard outlines three distinct designations: (1) certified Upcycled Ingredient(s) (UI), (2) Product Containing Upcycled Ingredient(s) (PUI), and (3) Less Than PUI(s). Each adds additional value to food manufacturing by diverting food loss and waste to a higher value end destination, subsequently mitigating the total weight of food waste produced and encouraging more responsible production. For more detail on the requirements for certification see Section 4. Operators that grow, produce, manufacture, process, and trade in food and beverage, dietary supplements, companion pet food, cosmetics, personal care products, and household cleaners are eligible to apply for the Upcycled Certification. These Operators include:

- 1) Harvest: Growers of agricultural products produced for human consumption that would have otherwise been lost or wasted.
- 2) Post-Process: Operators using Inputs from food that would have otherwise been lost or wasted to produce ingredients or products marketed for human consumption.
- 3) Non-Food Byproduct: Operators using Inputs from food that would have otherwise been lost or wasted to produce companion pet food, cosmetics, personal care products, household cleaning products, or ingredients to be used in any of these product categories.

The following types of goods are currently ineligible for certification:

- 1) Inputs derived from wood and forestry products.
- 2) Cigarettes, tobacco, vaping, or nicotine products.
- 3) Controlled substances according to U.S. Law.
- 4) Goods for sale within countries for which the certification trademark has not yet been registered.

The Upcycled Certification Standard is a voluntary certification. The requirements of the Standard shall not be used to verify or certify any other standards for certification including but not limited to food safety, Organic, or Gluten Free certifications.

1.3 Vision

1.3.1 Vision for Levels of Certification

While this Standard for the certification of upcycled ingredients and products is a major feat in the journey to create a more sustainable food system, this is the first step in scaling the upcycled food industry in a sustainable manner.

This Standard is a living document and will embrace continuous improvement over time. This first iteration of the Standard adopts a “wide-tent” approach, including a certification process for Applicants/ Operators producing upcycled ingredients (UI) and a certification process for Applicants/ Operators producing products containing upcycled ingredients (PUI). The Standard embraces and celebrates the use of upcycled ingredients in all amounts, but reserves front of pack labeling for products that meet or exceed thresholds for minimum percent upcycled ingredients by weight or tonnage diverted as a result of yearly production. A Less Than PUI designation is available for those Applicants/ Operators that do not meet these thresholds but whose waste diversion efforts warrant credit and celebration. Back of pack labeling may be used by Applicants/ Operators that have taken this initial step. Future iterations of the Standard are likely to incorporate additional forms of certification to highlight and acknowledge leaders in the sector who are contributing significantly to diverting waste from low value uses by incorporating greater quantities of upcycled ingredients into their product.

1.3.2 Vision for Demonstrating Impact

The Standard requires a third party supply chain audit to ensure that upcycled ingredients come from a verified source, an accounting of the Inputs diverted and percentage of upcycled ingredients within certified Upcycled Ingredient (UI) or Product Containing Upcycled Ingredients (PUI), and requires that Applicants/ Operators begin identifying sources of greenhouse gas emissions (GHGE) arising from production of the UIs and/ or PUIs. Thresholds for UIs and PUIs were set by the Upcycled Certification Standards Committee, a group of international experts in sustainability, agriculture, food systems, nutrition, food purchasing, and retail using the best available data from companies within the industry and modeling use-cases. Thresholds were refined through multiple comment periods including an extended public comment period.

Future versions of this Standard will require more refined impact reporting, such as but not limited to, the measurement of GHGE. GHGE accounting and reporting may not be common practice in the food industry and reporting may create a barrier-to-entry for Applicants/ Operators without the resources to conduct a full GHGE analysis. Therefore, current reporting requirements are largely qualitative and informative in nature. Future iterations of the Standard will require quantitative metrics and calculation.

The long term vision of the Upcycled Certification Standard is to guide the food system towards increased economic and environmental sustainability through food waste diversion. This will happen through:

- 1) Scaling the Upcycled Food industry through adoption of the certification among new and existing Operators.
- 2) Continuing to expand the Upcycled Certification Standard throughout other industries that have similar ingredient sourcing practices and supply chains such as companion pet food, cosmetics, personal care products, and household cleaning products.
- 3) Continued development of waste mitigation strategies and GHGE reporting to better understand major contributors to GHGE.

The Standard also has a strategic vision to support companies to develop realistic waste minimization targets throughout their operations. Measuring is the first step towards setting achievable targets and therefore the Standard will take a phased approach to target setting in the future including but not limited to:

- 1) Making documentation and review of Food Waste Assessment and Reduction Plan (FWARP) by management mandatory with corrective actions documented.
- 2) Making diversion goal-setting and demonstrated food waste *reduction* mandatory in order to maintain certification.

This Standard aims to balance the current capacity of the industry with the desire to define what it means to be a certified UI or PUI. This first iteration of the Standard reflects the current state of the sector and is designed to be refined and expanded for future iterations in tandem with industry growth and evolution.

2. Normative References

2.1 References

The following documents contain provisions that, through reference, constitute provisions of this Standard. At the time this Standard was written, the editions listed below are current and valid. All documents are subject to revision, and parties are encouraged to investigate the possibility of applying the most recent editions of the documents indicated below. The most recent published edition of the document shall be used for undated references.

¹ Drawdown Framework. Drawdown.org. <https://drawdown.org/drawdown-framework>. Published 2020. Accessed August 2020.

² Gunders, Dana. Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill. NRDC.org. <https://www.nrdc.org/sites/default/files/wasted-2017-report.pdf> Published 2017. Accessed June 2020.

³ ReFED:A Roadmap To Reduce U.S. Food Waste By 20 Percent-Executive Summary 2. ReFed.com <https://www.refed.com/downloads/Executive-Summary.pdf> Published 2016. Accessed July 2020.

⁴ Mekonnen, MM and Hoekstra, AY. The Green, Blue and Grey Water Footprint of Crops and Derived Crop Products, *Value of Water Research Report*. 2010 Series No. 47. Accessed September 2020.

⁵ Defining upcycled Foods. A Definition for Use Across Industry, Government, and Academia - The Upcycled Foods Definition Task Force. Upcycledfood.org/what-is-upcycled-food. https://www.chlpi.org/wp-content/uploads/2013/12/Upcycled-Food_Definition.pdf Published May 2020. Accessed August 2020.

Note: Stakeholder collaboration included: [Harvard University Food Law & Policy Clinic](#), [Drexel University Food Lab](#), [Natural Resources Defense Council](#), [World Wildlife Fund](#), and [ReFed](#)

⁶ National Organic Program. USDA Agricultural Marketing Services. <https://www.ams.usda.gov/about-ams/programs-offices/national-organic-program>. Accessed August 2020.

⁷ The Non-GMO Project Standard. Nongmoproject.org. <https://www.nongmoproject.org/product-verification/the-standard/> Accessed September 2020.

⁸ Framework for Regenerative Organic Certified. Regenorganic.org. https://regenorganic.org/wp-content/uploads/2020/09/ROC_Framework_0920.pdf Accessed July 2020.

⁹ Fairtrade Standards. Fairtrade.net. <https://www.fairtrade.net/standard> Accessed September 2020.

¹⁰ Mattson 2019 Study on Food Waste. Mattsonco.com. <https://www.mattsonco.com/wp-content/uploads/2020/01/Mattson-2020-FAFH-Macro-Trends.pdf> Published 2019 Accessed September 2020.

¹¹ Cosmetics and U.S. Law. U.S. Food and Drug Administration. FDA.gov. <https://www.fda.gov/cosmetics/cosmetics-laws-regulations/cosmetics-us-law> Accessed November 2020.

¹²World Resources Institute Food Loss and Waste Protocol, Food Loss and Waste Accounting and Reporting Standard: Executive Summary, Flwprotocol.org. https://www.flwprotocol.org/wpcontent/uploads/2019/03/FLW_Standard_Exec_Summary.pdf. Published Version 1.0. 2016. Accessed September 2020.

¹³International Organization for Standardization. (2018). Conformity assessment — Requirements for bodies certifying products, processes and services (ISO Standard No. 17065:2012). <https://www.iso.org/standard/46568.html> Accessed December 2020.

¹⁴ World Resources Institute and World Business Council for Sustainable Development. The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. <https://ghgprotocol.org/corporate-standard>. Published Revised Edition. 2004. Accessed August 2020.

2.2 Related Regulations and Control Requirements

Laws and regulations in geographic regions where Applicants/ Operators are located or where certified products may be sold may supersede the production, manufacturing, or labeling requirements and allowances of this protocol, including any variances granted. The applicable regulations should be considered carefully by any Applicant/ Operator intending to certify ingredients or products under the Standard to avoid inadvertently violating regulations concerning packaging, marketing and sales materials. The Upcycled Food Association and Certifying Body or Bodies (CB) disclaim any responsibility or liability for Applicant's/ Operator's compliance with applicable laws, regulations, and rules external to this Standard, and by agreeing to be certified under this Standard, the Applicant/ Operator releases and holds harmless the Upcycled Food Association from all claims or liability related to any applicable laws, regulations, or rules external to this Standard.

The Applicant/ Operator is required to maintain compliance with all applicable regulations for the process, production, intended use, and market destination of certified UI or PUI.

3. Definitions

3.1 Attestation: A formal document either created and supplied by the Upcycled Food Association or Certification Body, or provided by an Applicant/ Operator, that includes a written and signed statement confirming specific characteristics of a given crop, Input, ingredient, system, process, or operation.

3.2 Applicant: An organization that is seeking the designation for one or more certified UIs, Less Than PUIs, and/or PUIs.

3.3 Audit/review: A systematic evaluation to determine if programs and related activities achieve planned expectations, including the review or challenging of a written program, inspection observations, documentation of activities, corrective actions, and trends to determine the correlations between documented procedures and activities and actual execution.

3.4 Certification: A procedure by which a third party gives written assurance that a product, process or service is in conformity with established standards.

3.5 Certification Body (CB): An administrator that is licensed and approved by the Upcycled Food Association to assess and determine whether a system, Input, ingredient, or product fulfills the requirements stated in the Certification Standard.

3.6 Companion Pet Food: Plant or animal material intended for consumption by pets in a domestic setting such as but not limited to cats or dogs.

3.7 Cosmetics: Articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body...for cleansing, beautifying, promoting attractiveness, or altering the appearance." Included in this definition are products such as skin moisturizers, perfumes, lipsticks, fingernail polishes, eye and facial makeup preparations, shampoos, permanent waves, hair colors, toothpastes, and deodorants, as well as any material intended for use as a component of a cosmetic product.¹¹

3.8 Designation (Designating): The process of determining the categorization as an intended certified UI, Less Than PUI, or PUI in accordance with this Standard.

3.9 Inconsistent Supply: Input streams utilized in products seeking a designation of UI or PUI diverted from processes or supply chains yielding variable amounts of Inputs to be diverted (Ex: Lemon harvest yields variable amount of out-of-spec lemons).

3.10 Input: Any food material, product or byproduct of food production, or portion within, originating from but not limited to an agricultural, aquaculture, or food production setting, that would typically be destined for a food loss or waste destination,¹² that instead is used in the production of an ingredient, wholesale, or retail consumer good.

3.11 Inspection: An extensive desk audit and/or physical examination of a facility/site and its equipment and observation of practices conducted during the course of an audit in order to collect information to

determine compliance with specified requirements, often structured to lead to an evaluation of programs and systems.

3.12 Less Than PUI: A PUI that meets all requirements set forth within this Standard but does not meet or exceed the thresholds for $\geq 10\%$ upcycled ingredient content by weight or tonnage diverted as a result of yearly production. It can be assumed that Sections and requirements referring to PUIs extend to Less Than PUIs unless explicitly stated within the Standard.

Note: The concept of a Less Than PUI takes regulatory precedent from the USDA National Organic Program (NOP)⁶. While the USDA National Organic Program does not require or permit brands with less than 70% organic content to be certified, the USDA NOP does require brands to produce these products in accordance with the regulation and protect organic integrity. Further, the regulation requires that manufacturers with less than 70% organic content still comply with the record-keeping requirements of the USDA NOP.

3.13 Lot/ Production Number: A distinctive combination of letters, numbers or symbols, or any combination thereof from which the complete history of the manufacture, processing, packaging, holding, and distribution of a batch or lot of finished products can be identified.

3.14 Major Non-Conformity: A systemic non-conformity that could affect the compliance of an Input or upcycled ingredient with certified UI or PUI requirements.

3.15 Manufacture or Manufacturing: All operations associated with the production of ingredients or finished products including packaging, labeling, testing, and quality control of an ingredient or finished product.

3.16 Mark: A label or symbol that is used to indicate to consumers that a particular good and/or service, has met certain standards.

3.17 Minor Non-Conformity: A non-conformity that is immaterial or does not pose a compliance threat to the relevant Inputs or upcycled ingredients (Ex: a different processing aid is used in the formulation of a UI).

3.18 Non-Conformity: Any deviation from criteria within the Standard or deviation from operations not approved by the CB.

3.19 Non-Compliance: A failure by the Applicant/ Operator to comply with the requirements of the standard, or failure to take corrective action in the event of a deviation from requirements. A non-compliance may be classified as major or minor depending on the systemic nature of the offence and/ or the significance of the non-compliance.

3.20 Operator: An organization that possesses certification for an UI, Less Than PUI, or PUI.

3.21 Original Producer: The origin of a diverted Input and the point at which it is diverted, such as but not limited to a farm or production facility.

3.22 Product Containing Upcycled Ingredient(s) (PUI): A food, beverage, dietary supplement, companion pet food, cosmetic, personal care, or household cleaning product that includes upcycled ingredients and meets the criteria set forth within this Standard and is certified as such. Single or multi-component inputs (certified as a UI, Less Than PUI, PUI, or otherwise) may be used within a different PUI seeking certification.

3.23 Risk Assessment: The Applicant/ Operator's evaluation of its facilities, products, processes, and activities to determine where the highest and lowest potential for production of food waste exists.

3.24 Upcycled Foods⁵: Upcycled Foods use ingredients that otherwise would not have gone to human consumption, are procured and produced using verifiable supply chains, and have a positive impact on the environment.

3.25 Upcycled Ingredient (UI): Input originally produced for use in human food that otherwise would not have gone to human consumption, procured and produced using verifiable supply chains, and has a positive impact on the environment that meets the criteria set forth within this Standard and is certified as such. Certified UIs are not consumer facing goods and shall not be sold directly to the consumer. Certified UIs shall have $\geq 95\%$ uniform diverted Inputs which shall be considered single ingredient Inputs with the possible addition of processing aids or other additives as needed. Processing aids and other additives in

excess of 5% shall be excluded from the product seeking the designation of certified UI's calculation of $\geq 95\%$ uniform diverted inputs.

3.26 Virgin ingredient: An ingredient that contains no upcycled content.

4. Requirements for Certification

4.1 Initial Application for Certification

Applicants/ Operators shall comply with the following requirements:

4.1.1 Execute a signed UFA license agreement and service agreement with an UFA authorized CB.

4.1.2 Execute a signed agreement permitting public listing of all certified UIs, Less Than PUIs, and PUIs and their associated Applicant/ Operator.

4.1.3 Submission of documents, procedures and records for review as set forth in this Section (4).

4.1.4 General Information for UI or PUI Certification

The Applicant/ Operator shall provide information about the operation, Inputs, ingredient, product, and production practices. This information shall include, but is not limited to:

- 1) Name and address of Applicant/ Operator, farms, or manufacturing facility or facilities.
- 2) Name and address of parent company, if applicable.
- 3) Name of Ingredient or Product seeking a designation of UI, Less Than PUI, or PUI.
- 4) Name of Input(s), current Upcycled certification designation (if applicable) and necessary descriptors [Ex: spent barley from brewing, romaine leaves, Certified upcycled grapeseed flour (UI)] for each product listed in 4.1.4 3).
- 5) Form of Input(s) (Ex: partial, whole, etc).
- 6) Physical state(s) of Input, (Ex: fresh, dried).
- 7) Name and address of original producer of Input(s), (Ex: name of farm, manufacturer, etc., if applicable).
- 8) Other identification information or applicable original producer's information as required by CB.

Note: An Applicant/ Operator producing a consumer facing product utilizing their own Input stream(s) is not required to first certify the Input(s) as a certified UI or PUI in order for said product to be certified as a PUI.

Example: A french fry manufacturer includes potato peels (a byproduct of french fry production) they have milled and dried in a flour blend. In this case, the french fry manufacturer may seek certification for the milled, dried potato peels as a certified UI. The french fry manufacturer may also seek PUI certification for the flour blend which includes the milled, dried potato peels as an ingredient. This may be done without first certifying the milled, dried potato peels as a certified UI since the french fry manufacturer owns its Input stream.

If ownership of an Input is transferred to be used in an outside Applicant/ Operator's products, that Input would not be considered a certified UI or PUI without an audit and is prohibited from being marketed as such.

Example: A french fry manufacturer sells potato peels (a byproduct of french fry production) to a potato chip manufacturer. If the french fry manufacturer did not have the potato peels certified as an UI, the onus would be on the Applicant/ Operator (potato chip manufacturer) to provide all necessary documentation to substantiate the supply chain of the potato peels for inclusion in the potato chip manufacturer's product seeking a designation of certified PUI.

An Applicant/ Operator seeking a designation of certified PUI that includes a previously certified UI or PUI shall provide documentation of the corresponding certified UI or PUI to be included.

4.2 Technical Certification Requirements

4.2.1 The Applicant/ Operator shall provide an Attestation (see Note 2) that attests to applicable core food safety and other applicable requirements and regulations related to the product seeking a designation of certified UI and/ or PUI.

Note 1: Proof of GMP, GAP, Certified HACCP, or GFSI benchmarked certifications shall satisfy this requirement. Certified Organic, Gluten Free, or other product certifications in themselves do not fulfill the requirements of Section 4.2.1.

Note 2: Attestation Requirements

- 1) All Attestations shall include the signature and the printed name of the party signing the Attestation, and the date.
- 2) The party signing the Attestation shall have sufficient knowledge of the supply chain to authoritatively sign on behalf of the Applicant/ Operator.
- 3) If appropriate, Attestations should be accompanied by supporting documentation.
- 4) At the discretion of the CB or the UFA, Attestations may be required in additional situations not explicitly identified in Section 4.

4.2.2 The Applicant/ Operator shall provide an Attestation stating that the diverted input(s) were originally produced for use in human food and would have otherwise gone to a food loss or waste destination and identifying those destination(s).

Note: The Attestation may be generated using a questionnaire that creates a transparent paper trail to provide accountability

4.2.3 The Applicant/ Operator shall provide an Attestation describing and providing proof of diversion, via bill of lading or paid invoice from the original producer.

Note 1: If Applicant/ Operator is seeking a designation of a certified PUI and they purchase a certified UI or PUI or multiple certified UIs or PUIs, the only documentation needed from the supplier of the certified UI(s) or PUI(s) is:

- 1) A certificate listing the specified UI(s) and/ or PUI(s).
- 2) Bill of lading showing the quantity of certified UI(s) and/ or PUI(s) purchased.

Note 2: If an Applicant/ Operator is seeking the designation of a certified PUI and they do not purchase certified UIs or PUIs for use within, the onus is on the Applicant/ Operator to procure all documentation necessary to substantiate compliance with Section 4.2.

4.2.4 The Applicant/ Operator shall have a standardized naming convention in place to ensure auditing and traceback capabilities from Input through to ingredient or product seeking a designation as a certified UI, Less Than PUI, or PUI.

4.2.5 The Applicant/ Operator shall provide a calculation spreadsheet showing tonnage diverted as a result of yearly production and percentage of Inputs and/or certified UIs or PUIs within the product seeking the designation of certified UI Less Than PUI, or PUI (See Section 4.3). Formulations shall be disclosed to the extent necessary to confirm certification compliance and the product designation of UI, Less Than PUI, or PUI.

4.3 Calculating Formulation, Upcycled Ingredient Percentages, and Tonnage Diverted

4.3.1 Designating UIs, Less Than PUIs, and PUIs

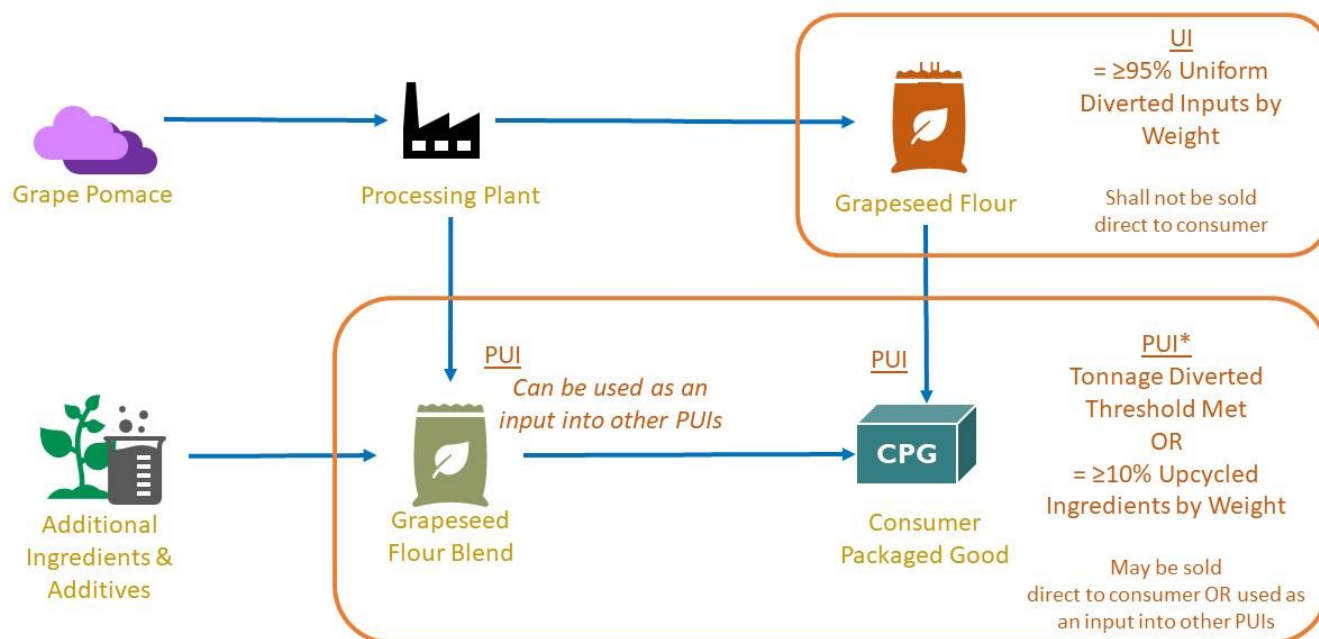
The Applicant/Operator shall assign the designation of UI, Less Than PUI, or PUI to each ingredient or product under consideration for certification.

- 1) **Upcycled Ingredient (UI):** Input originally produced for use in human food that otherwise would not have gone to human consumption, procured and produced using verifiable supply chains, and has a positive impact on the environment that meets the criteria set forth within this Standard and is certified as such. Certified UIs are not consumer facing goods and shall not be sold directly to the consumer. Certified UIs shall have $\geq 95\%$ uniform diverted Inputs which shall be considered single ingredient Inputs with the possible addition of processing aids or other additives as needed. Processing aids and other additives in excess of 5% shall be excluded from the product seeking the designation of certified UI's calculation of $\geq 95\%$ uniform diverted inputs.
- 2) **Product Containing Upcycled Ingredient(s) (PUI):** A food, beverage, dietary supplement, companion pet food, cosmetic, personal care, or household cleaning product that includes upcycled

ingredients and meets the criteria set forth within this Standard and is certified as such. Single or multi-component inputs (certified as a UI, Less Than PUI, PUI, or otherwise) may be used within a different PUI seeking certification.

Note: A product that does not meet or exceed the minimum $\geq 10\%$ upcycled ingredient content by weight or tonnage diverted thresholds may qualify for a Less Than PUI designation (see * in figure 1).

Figure 1: Differentiating UIs and PUIs



* Applicants/ Operators seeking a designation of Certified PUI with front-panel claim marketing intentions consistent with Section 10 shall fulfill the minimum $\geq 10\%$ upcycled ingredient content by weight or tonnage diverted threshold as a result of production. A back-panel only claim (Less Than PUI) is an option for Applicants/Operators seeking a designation as a certified PUI that do not meet or exceed these minimum thresholds. See Section 4.3.1 for more details.

Figure 1: Differentiating UIs and PUIs

Products seeking a designation of certified UI shall be made from $\geq 95\%$ uniform diverted Input by weight (such as grape pomace) and may be certified for use in certified PUIs.

Products seeking certification that are ingredient blends of $< 95\%$ uniform diverted Inputs by weight shall be designated for certification as PUIs.

Certified PUIs shall be composed of:

- 1) $\geq 10\%$ upcycled ingredients by weight (which shall include Inputs, certified UIs and/ or PUIs) or
- 2) Meet or exceed a threshold for total tonnage of Inputs diverted based on production records over the previous year (preceding 12 months upon date of certification application). (See Table 1).

Note: Market forecasts, sales projections, or extrapolated data may be used in the absence of production and sales data from the past 12 months.

Certified Less Than PUIs shall be composed of:

- 1) $< 10\%$ upcycled ingredients by weight (which shall include Inputs, certified UIs, and or certified PUIs) and
- 2) Less than the threshold for total tonnage of Inputs diverted based on production records over the previous year (preceding 12 months upon date of certification application) (See Table 1).

Certified PUIs shall include Inputs, certified UIs, and/ or PUIs (See Section 4.1.4.). See Section 4.3.4 for factoring in the reconstitution of dehydrated Inputs, Section 4.3.5 for examples of calculating percent UI by weight, and Section 4.3.6 for calculating tonnage diverted as a result of yearly production.

Certified PUIs may be sold direct to a consumer whereas certified UIs shall not be sold direct to a consumer.

4.3.2 Minimum Threshold for Certified UIs

UIs certified in accordance with this Standard shall contain a minimum percentage of $\geq 95\%$ uniform diverted Inputs by weight which shall be considered single ingredient Inputs with the possible addition of processing aids or other additives as needed. Processing aids and other additives in excess of 5% shall be excluded from the product seeking the designation of certified UI's calculation of $\geq 95\%$ uniform diverted inputs. See Section 4.3.4 for reconstitution of dehydrated Inputs and Section 4.3.5 for calculating percent UI by weight.

4.3.3 Minimum Thresholds for Certified PUIs

PUIs certified in accordance with this Standard shall either:

- 1) Contain a minimum of $\geq 10\%$ upcycled ingredients by weight (which shall include Inputs, certified UIs and/ or PUIs).

Or

- 2) Meet or exceed a threshold for total tonnage of diverted Inputs due to production over the previous year (See Section 4.3.1) based on annual gross product sales (See Table 1). In accordance with Section 4.3.1 Market forecasts, sales projections, or extrapolated data may be used In the absence of production and sales data from the past 12 months.

Note: A product that does not meet or exceed the minimum $\geq 10\%$ upcycled ingredient content by weight or tonnage diverted as a result of yearly production thresholds may qualify for a Less Than PUI designation.

4.3.4 Reconstitution of Dehydrated Inputs and Upcycled Ingredients

For the purposes of tonnage diverted or percent upcycled ingredients by weight calculations, Inputs that are rehydrated prior to mixing may not be rehydrated beyond the hydration level at the point of diversion. The onus is on the Applicant/ Operator to provide rationale for the hydration level at the point of diversion.

Example: Rationale for the hydration level of dehydrated potatoes.

"University of Idaho Agricultural Extension Measuring Potato Dry Matter Content on Farm" <https://www.extension.uidaho.edu/publishing/pdf/CIS/CIS1219.pdf> (Accessed 10/24/2020). "Potatoes are mostly water (75 to 85%), and the water content varies with variety, maturity, growing location, seasonal effects, fertilization program, and storage conditions."

Based on the above review, dehydrated potatoes could be reconstituted up to 85% as provided by the academic or regulatory reference.

Note: In the event that an academic or regulatory reference cannot be provided, the onus shall be on the manufacturer to provide evidence-based documentation for the moisture content.

4.3.5 Calculating Percent Upcycled Ingredients by Weight

The calculation of the percentage of upcycled ingredient(s) in a product formulation is based on the total weight of the upcycled ingredient(s) as a percentage of the formulated weight of the product at the point of mixing. The weight of the upcycled ingredient(s) is the net weight at the point of mixing. Added water shall not be included in this calculation.

Example 1: Calculating percentage of UI per batch of product formulation

50 lbs of potato skins are discarded at a manufacturer that produces packaged mashed potatoes. Instead of composting them, the potato skins are dried and ground into a flour weighing 20 lbs total. This flour is purchased by an Applicant/Operator who intends to use it in a product seeking a designation as a certified PUI. The Applicant/Operator procures all necessary documentation from the supplier to substantiate compliance with Sections 4.1.4 and 4.2.3. This upcycled ingredient is used in a packaged pancake mix seeking a designation as a certified PUI. The net weight of the final batch after mixing is 200 lbs. For the purpose of the weight calculations, this batch of pancake mix is considered to have 10% upcycled ingredients, calculated as the net weight (20 lbs) of the potato flour at the point of mixing divided by the net weight (200 lbs) of the final product at the point of mixing.

$$\frac{20 \text{ lbs of upcycled potato flour}}{200 \text{ lbs pancake mix (seeking designation as a certified PUI)}} = 10\% \text{ upcycled ingredients by weight}$$

Note: It is acknowledged that in order for an ingredient to be considered an UI it must contain ≥95% uniform diverted Inputs consistent with Section 3.25. In the above example processing aids were <5% therefore 100% credit shall be given for the upcycled potato flour so long as it meets the definition established in Section 3.25.

Example 2: Calculating percentage of UI per batch with ingredient segregation after diversion

100 lbs of grape pomace from a winery is diverted from becoming compost and instead sold to an ingredient manufacturer. The Applicant/Operator (ingredient manufacturer) procures all necessary documentation from the supplier to substantiate compliance with Sections 4.1.4 and 4.2.3. The Applicant/Operator sorts the pomace to remove the seeds from the stems and skins. The seeds (50 lbs) are dried and ground into a flour (30 lbs) with the remaining 10 lbs attributed to moisture loss and an additional 10 lbs being composted. The Applicant/Operator provides all necessary documentation to substantiate compliance with Section 4.2. This resulting grape seed flour is used as an ingredient in a batch of packaged cookies seeking a designation of certified PUI. The final batch of cookies at the point of mixing weighs 210 lbs., however 10 of those pounds are from added water, which is excluded from the calculation. For the purpose of the weight calculations, these cookies are considered to have 15% upcycled ingredients, calculated as the net weight (30 lbs) of grape seed flour at the point of mixing divided by the net weight of the final product at the point of mixing (200 lbs) excluding any added water.

$$\frac{30 \text{ lbs of upcycled grape seeds}}{200 \text{ lbs cookies (seeking designation as a certified PUI)}} = 15\% \text{ upcycled ingredients by weight}$$

Note: The clarification provided in the note in Example 1 also applies.

Example 3: Calculating percentage of UI in a continuous production process

1000 lbs of corn germ is normally discarded. Instead, the Applicant/Operator decides to create a product using the germ in a new granola bar which is seeking the designation of PUI. The corn germ is dried to 800 lbs total and ground to a smaller size with 200 lbs attributed to moisture loss. The ground germ is added at 20 lb/hr to a continuous production line that delivers 100 lb/hr of finished granola bars. For the purpose of the percent by weight calculations, these granola bars are considered to have 20% upcycled ingredients, calculated as the rate of ground germ at the point of mixing divided by the rate of final product to be produced at the point of mixing:

$$\frac{20 \text{ lbs of ground germ}}{1 \text{ hr}} \times \frac{1 \text{ hr}}{100 \text{ lbs of bars}} = 20\% \text{ upcycled ingredients by weight}$$

Note

- 1) In the above example, the Applicant/Operator is vertically integrated. The 1000 lbs of corn germ that is normally discarded can be considered an UI within the Applicant/Operator's granola bar seeking a designation as a certified PUI. The Applicant/Operator may elect to also certify the corn germ material as a certified UI if the Applicant/Operator thinks that there may be a market opportunity to sell this material to other Applicants/Operators seeking certified UIs for inclusion in their product seeking a designation as a certified PUI.
- 2) The clarification provided in the note in Example 1 also applies.

Example 4: Calculating percentage of UI per batch of product formulation containing a product seeking the designation of UI (potato skin flour) and a previously certified PUI (spent grain flour blend).

50 lbs of potato skins are regularly composted at a manufacturer that produces packaged mashed potatoes. Instead of composting them, the potato skins are dried and ground into a flour weighing 20 lbs total with the remaining 30 lbs attributed to moisture loss. This potato skin flour is sold to an Applicant/ Operator who intends to use it in a product seeking a designation as a certified PUI. The Applicant/ Operator procures all necessary documentation from the supplier to substantiate compliance with Sections 4.1.4 and 4.2.3. This potato skin flour is combined with 10 lbs. of previously certified spent grain flour blend (certified PUI) and other additional ingredients to create a packaged muffin mix. The Applicant/Operator provides documentation that the spent grain flour was previously certified. The net weight of the final batch after mixing is 200 lbs. For the purpose of the percent by weight calculations, this batch of pancake mix is considered to have 15% upcycled ingredients by weight, calculated as the sum of the net weight (20 lbs) of the potato flour and spent grain (10 lbs.) at the point of mixing divided by the net weight (200 lbs) of the final product at the point of mixing.

$$\frac{20 \text{ lbs of upcycled potato flour} + 10 \text{ lbs. certified UI spent grain flour}}{200 \text{ lbs pancake mix (seeking designation as a certified PUI)}} = 15\% \text{ upcycled ingredients by weight}$$

Note: The clarification provided in the note in Example 1 also applies.

Example 5: Calculating percentage of UI in instances where the product does not meet or exceed the $\geq 10\%$ upcycled ingredient content by weight threshold and receives the Less Than PUI designation.

Juniper berries from a distillery that produces gin were previously landfilled. Instead, 10 lbs of juniper berries are sold to a cosmetic Applicant/ Operator that uses them as a flavoring agent in their lip care balm, a product seeking a designation as a certified PUI. The Applicant/Operator procures all necessary documentation from the supplier to substantiate compliance with Sections 4.1.4 and 4.2.3. The net weight of the final lip care balm batch after mixing is 300 lbs. Additionally, it is important to note the Applicant/Operator does not meet the minimum tonnage diverted as a result of yearly production. For the purpose of the weight calculations, this batch of lip care balm is considered to have 3% upcycled ingredients, calculated as the net weight (10 lbs) of the juniper berries at the point of mixing divided by the net weight (300 lbs) of the final product at the point of mixing. This product may qualify for a Less Than PUI designation.

$$\frac{10 \text{ lbs of upcycled juniper berries}}{300 \text{ lbs lip care balm (seeking designation as a certified PUI)}} = 3\% \text{ upcycled ingredients by weight}$$

4.3.6 Calculating Tonnage Diverted

The calculation for tonnage diverted shall be based on the tons (ton = 2,000 lbs) of Inputs, from one or multiple uniform diverted Inputs or multi-component ingredients, diverted from the original producer(s) used to produce a product seeking a designation of certified UI or PUI over the 12 months preceding the date of initial application or application for renewal (See Figure 1 within 4.3.1). The weight of the Inputs shall include moisture lost in later processing steps such as drying or baking, provided that such moisture loss is documented on chain of custody documentation as specified in Sections 4.2.4, 4.3.4, 4.4, and 4.5.

Note: For products seeking the designation of certified PUI, the tonnage thresholds as required in table 1 and Section 4.3.1 shall be the sum of all diverted Inputs associated with the production of Inputs, certified UIs, or PUIs included within said product provided that:

1) The Applicant/Operator procures all necessary documentation from the supplier to substantiate compliance with Section 4.1.4 and 4.2.3 for any uncertified UI or PUI

and

2) Moisture loss is documented on chain of custody documentation as specified in Sections 4.2.4, 4.3.4, 4.4, and 4.5.

Example 1: Calculating tonnage diverted

35 tons of blueberry pomace is discarded in the preceding 12 months at an Applicant/ Operator that produces blueberry puree. Instead of composting the pomace, it is dried then milled for inclusion as a functional ingredient within a skin cream. The yield of dried, milled pomace is 10 tons. The Applicant/ Operator is seeking the designation of PUI for the skin cream. The tonnage diverted is 35 tons even though the final weight of the milled pomace is 10 tons. The Applicant reports \$9.75 million in annual sales from the skin cream in the past year, putting them in the "Tier 3 Product" category (See Table 1) which requires "annual PUI production results in ≥ 25 tons/ year of diverted Inputs." This tonnage diverted as a result of yearly production of the skin cream exceeds the threshold and therefore could be certified as a PUI provided this information is documented on chain of custody documentation as specified in Sections 4.2.4, 4.3.4, 4.4, and 4.5 and other requirements of the Standard are met.

Example 2: Calculating tonnage diverted to meet or exceed the PUI tonnage diverted as a result of yearly production threshold in a product seeking the designation of PUI that does not meet or exceed the $\geq 10\%$ upcycled ingredients by weight threshold.

15 tons of juicing pomace including carrot, apple, and kale, considered a multi-component ingredient, are discarded in the preceding 12 months at an Applicant/ Operator that produces juice. Instead of composting the juice pomace it is dried and ground into a powder for inclusion in a dog treat seeking a designation as a certified PUI as natural flavoring. The final juice powder makes up 3% of the treat by weight which does not meet or exceed the percentage threshold of $\geq 10\%$ by weight in order for the Applicant/ Operator to seek a designation of PUI (though the Applicant/ Operator may seek a designation of Less Than PUI). The Applicant

reports \$4.25 million in annual sales from the treat in the past year, putting them in the “Tier 2 Product” category (See Table 1) which requires “annual PUI production results in ≥ 10 tons/ year of diverted Inputs.” This tonnage diverted as a result of yearly production of the treats exceeds the threshold and therefore could be certified as a PUI provided this information is documented on chain of custody documentation as specified in Sections 4.2.4, 4.3.4, 4.4, and 4.5 and other requirements of the Standard are met.

Table 1: Certification Minimum Thresholds

| Annual Gross Product Sales | Certified UI | Certified PUI ⁴ | |
|--|--|---|--|
| Tier 1 Product <\$2 million annual gross product sales | $\geq 95\%$ of the Ingredient shall be formulated from a uniform diverted Input ¹ | $\geq 10\%$ by weight shall be comprised of upcycled ingredients ² | Or Annual PUI production results in ≥ 5 tons/ year of diverted Inputs ³ |
| Tier 2 Product \$2- \$5 million annual gross product sales | $\geq 95\%$ of the Ingredient shall be formulated from a uniform diverted Input ¹ | $\geq 10\%$ by weight shall be comprised of upcycled ingredients ² | Or Annual PUI production results in ≥ 10 tons/ year of diverted Inputs ³ |
| Tier 3 Product \$5-\$25 million annual gross product sales | $\geq 95\%$ of the Ingredient shall be formulated from a uniform diverted Input ¹ | $\geq 10\%$ by weight shall be comprised of upcycled ingredients ² | Or Annual PUI production results in ≥ 25 tons/ year of diverted Inputs ³ |
| Tier 4 Product \$25-\$50 million annual gross product sales | $\geq 95\%$ of the Ingredient shall be formulated from a uniform diverted Input ¹ | $\geq 10\%$ by weight shall be comprised of upcycled ingredients ² | Or Annual PUI production results in ≥ 100 tons/ year of diverted Inputs ³ |
| Tier 5 Product >\$50 million annual gross product sales | $\geq 95\%$ of the Ingredient shall be formulated from a uniform diverted Input ¹ | $\geq 10\%$ by weight shall be comprised of upcycled ingredients ² | Or Annual PUI production results in ≥ 200 tons/ year of diverted Inputs ³ |
| <p>¹Meets requirements within Sections 4.3.1, 4.3.2, 4.3.4, and 4.3.5. ²May include certified UI(s) or PUI(s) and meets requirements within Sections 4.3.1, 4.3.3, 4.3.4, and 4.3.5. ³Meets requirements within Sections 4.3.1, 4.3.4, and 4.3.6.</p> <p>Note: If available, annual gross sales product shall be the preceding 12 months of product-specific sales upon date of certification application/renewal. As noted within Section 4.3.1, market forecasts, sales projections, or extrapolated data may be used in the absence of production and sales data from the past 12 months..</p> <p>⁴A product that does not meet or exceed the minimum $\geq 10\%$ upcycled ingredient content by weight or tonnage diverted as a result of yearly production thresholds may qualify for a Less Than PUI designation.</p> | | | |

4.4 Traceability

An Applicant/Operator seeking a designation as a certified UI and/or PUI for a product shall provide traceability documents/procedures/records as outlined in Sections 4.4.1- 4.4.5.

4.4.1 The Applicant/Operator shall provide a Production Flow Chart (indicating the original producer of the diverted Input).

Example:

Figure 2: Example Production Flow Chart

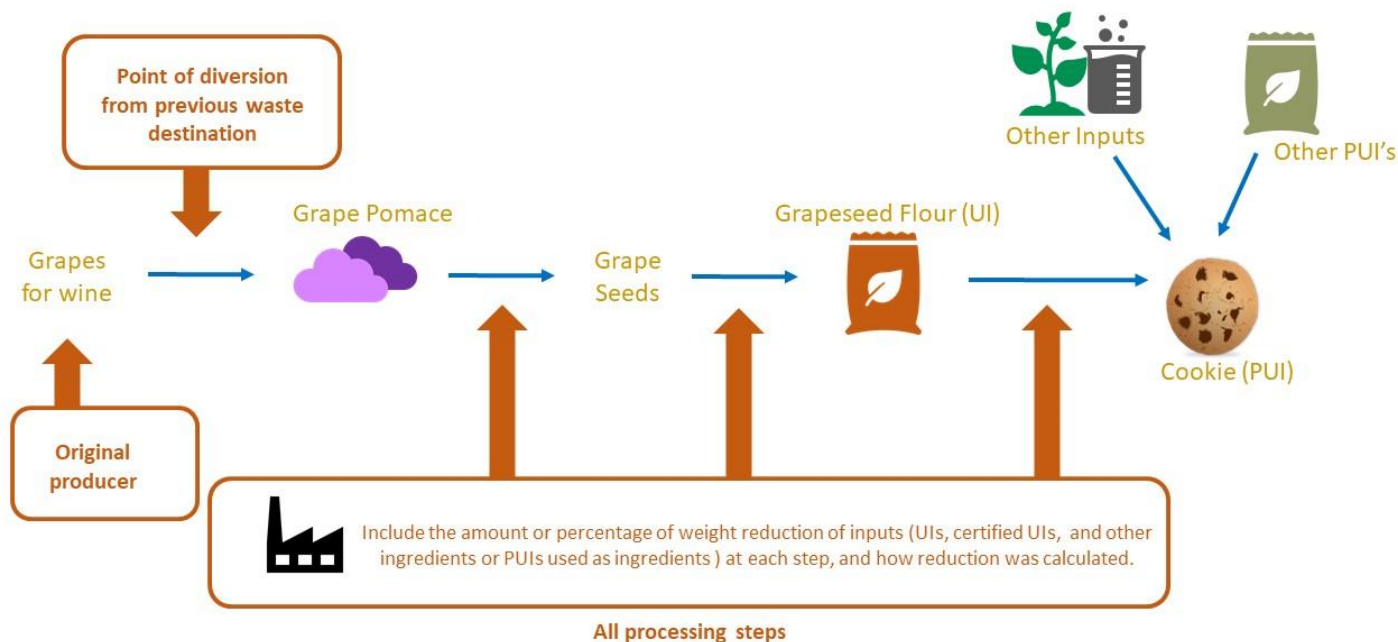


Figure 2: Example Production Flow Chart

The Production Flow Chart shall include incoming Inputs (including Input[s], certified UI[s], certified PUI[s], and other ingredients) and all processing steps including the amount or percentage of weight reduction at each step as required in Section 4.3.4. It shall also include how the amount or percentage weight reduction was calculated unless previously certified UIs or PUIs are being used (See Section 4.1.4).

4.4.2 The Applicant/Operator shall demonstrate the ability to trace Inputs from receipt through to finished product seeking a designation of certified UI, Less Than PUI, or PUI via linked lot/production numbers on process paperwork utilizing the naming convention identified in Section 4.2.4.

4.4.3 The Applicant/Operator shall provide complete documentation of the uniform diverted Input(s) present in the product seeking designation as a certified UI, Less Than PUI, or PUI including:

- 1) Chain of custody evidence the Input has been diverted from original producers, (Ex: bill of lading) and signed Attestation stating the source of the Input in accordance with Sections 4.2.1 and 4.2.3.
- 2) Total tonnage diverted from the original producer(s) used to produce the product seeking a designation of certified UI Less Than PUI, or PUI over the 12 months preceding the date of initial application or application for renewal. See Section 4.3.6.

Note: Chain of custody evidence as referenced above shall be deemed unnecessary if the Applicant/ Operator is purchasing a certified UI or PUI for a product seeking a designation as a certified PUI. Proof of Certification for the certified UI or PUI shall be dated within the past 18 months. Additional documentation from the supplier that may be required as outlined in Section 4.2.3.

4.4.4 Chain of custody evidence that the Input has been transferred to the Applicant/Operator (Ex: bill of lading). This documentation shall reference:

- 1) Total tonnage transferred from original producer to Applicant/ Operator including all intermediaries (if necessary). See Section 4.3.6.

- 2) Necessary documentation and compliance with Sections 4.2.2, 4.2.3, and 4.2.4.

4.4.5 Documentation shall be provided indicating the identity of the Input, certified UI, or PUI is preserved throughout storage, transportation, and production in accordance with good manufacturing practices including:

- 1) Statement describing how Input is captured to be diverted.
- 2) Statement describing how the Input, certified UI, or PUI is protected from contamination and commingling.
- 3) Necessary documentation and compliance with Sections 4.2.2, 4.2.3, and 4.2.4.

4.5 Additional Traceability Requirements for Certified PUIs

Applicant/ Operator shall provide chain of custody evidence that the Input(s), certified UI(s) or PUI(s) is present in the product seeking designation as a certified PUI as sold. (Ex: documented finished product formulation as sold that verifies use of Input(s), certified UI(s), and/or PUIs in the finished product). Documentation shall include:

- 1) Proof of compliance with Sections 4.2.2, 4.2.3, and 4.2.4
- 2) Percentage by weight of each Input, certified UI, certified Less Than PUI, or certified PUI in the finished product formulation as sold. See Section 4.3.5.
- 3) The amount or percentage of weight reduction as the Input, certified UI, certified Less Than PUI, or certified PUI is transformed into the finished product as sold in accordance with Sections 4.3.1 and 4.3.4.

4.6 Additional Documentation Requirements for Harvest Applicant/ Operators and Other Food Production Systems with Inconsistent Supply

4.6.1 Purpose

Some Applicant/ Operators may not have consistent yields and markets. Whether inclement weather, drought, market shifts (such as changes in supply needed for grocery stores vs. restaurants during the COVID-19 pandemic), or otherwise, yields can be estimated based on historical precedence, but predictions are rarely perfect. Additionally, it is important to note the intention is not for producers and manufacturers to over-produce in order to have surplus for which they intend to seek upcycled certification. The foundation of this Standard is to ensure Inputs were truly destined for food loss and waste destinations before diversion in order to verify the ingredient or product as Upcycled. The purpose of this section is to substantiate Inputs with inconsistent supply in an effort to ensure they truly meet the definitions of UI or PUI.

Note: Inconsistent Supply shall be defined as Input streams utilized in products seeking a designation of UI or PUI diverted from processes or supply chains yielding variable amounts of Inputs to be diverted (Ex: Lemon harvest yields variable amount of out-of-spec lemons).

4.6.2 Harvest or other Applicants/Operators with Inconsistent Supply shall provide a log showing past or future date(s) of harvest or Input sourcing, weight or estimated weight, and volume or estimated volume of amount to be certified.

Note: Future date(s) of harvest or Input sourcing refers to Inputs originally produced for use in human food that otherwise would not have gone to human consumption due to lack of resources or lack of market, and acknowledges that certification may provide Harvest or other Applicants/ Operators with Inconsistent Supply with a market and an off taker, therefore allowing them to harvest or otherwise source the Inputs seeking a designation of UI or PUI.

If estimated weight and/or volumes are provided, the Harvest or other Applicant/ Operator with Inconsistent Supply shall also provide a description of how they reached this estimate.

4.6.3 Harvest or other Applicants/ Operators with Inconsistent Supply shall demonstrate the lack of market for purchasing the Harvest or other Applicant/Operator with Inconsistent Supply's Inputs by submitting to the CB written evidence of efforts to sell the Inputs including the dates potential buyers of applicable Inputs were contacted. Written evidence may include letters, faxes, email correspondence, ingredient evaluation reports, or phone logs of discussions with potential buyers. A minimum of three potential buyers shall have been contacted during the previous 12 months.

4.7 Risk Assessment and Food Waste Assessment and Reduction Plan (FWARP)

The Applicant/ Operator shall establish a waste monitoring process to document where food/ingredient waste does or may occur, and the baseline for waste produced during the production of the product seeking a designation of certified UI or PUI. This plan shall be documented and known as the FWARP. The Applicant/ Operator may choose to use the production flow chart in Section 4.4.2 to also document where food/ingredient waste does or may occur.

4.8 Public Statement/ Declaration of Commitment

Producer shall make available a public statement on a website or other publicly available medium, (or at minimum, where the Operator has no public medium, on UFA's website) and permit UFA to post on UFA's website:

- 1) The Applicant/ Operator's Upcycled Certification Program enrollment status.
- 2) The intent to further reduce food waste by expanding the Applicant's/ Operator's upcycling efforts.

Any public statements regarding the Applicant's/ Operator's enrollment status in the Upcycled Certification shall be approved by the CB prior to posting.

4.9 Training Provided by Applicant/ Operator

4.9.1 Documents/procedures/records of proper training on ensuring Upcycled Certification Program integrity shall include but are not limited to:

- 1) Employees shall receive initial and annual refresher training.
- 2) Purpose and requirements of the Standard and certification program as applicable to job responsibilities.
- 3) Policies and procedures related to compliance with requirements of the Standard and certification program as applicable to the job responsibilities.
- 4) Work instructions related to specific tasks required to maintain compliance with the Standard and certification program.

4.9.2 Employee training shall be in accordance with the Applicant/ Operator's documented policies and procedures for maintaining compliance.

4.9.3 All employee training records shall be maintained at the production facility for a period of three (3) years and available for review during CB inspections.

4.10 Renewal

4.10.1 Operators shall submit all applicable documentation as outlined in Sections 4.1-4.11.

4.10.2 Operators shall be required to demonstrate at the next annual monitoring that changes to the Standard were implemented, or alternatively, that the Operator is in compliance with any extension or deviation granted by the CB.

4.10.3 Operators shall be responsible for payment of fees associated with annual certification services, additions, and updates according to the terms of the CB agreement and the UFA license agreement.

4.10.4 Operators shall be subject to annual audit by the CB. In instances where CB suspects the potential of egregious non-conformities with the Standard, the CB reserves the right to conduct unannounced audits to confirm compliance.

4.10.5 Other requirements as requested by the CB.

4.10.6 Renewal Triggered by the Reformulation of Product Designated as a Certified UI or PUI

In case a product reformulation triggers a reduction or increase in the tonnage diverted as a result of yearly production of the certified UI or PUI, or in the percentage by weight of Inputs, certified UIs, and/ or PUIs, the certified UI or PUI may be subject to recertification. These situations shall be addressed on a case by case basis with the CB.

4.10.7 Mid-year Certified UI or PUI additions

In the case that an Operator would like to add additional products seeking the designation of certified UI, Less Than PUI, or PUI to its certificate, it shall notify the CB in writing. The CB shall commence the certification evaluation process consistent with the requirements outlined in this Standard.

4.11 Additional Data Capture

The purpose of this section is to gather information for potential future requirement inclusion in this Standard. While submitting this documentation is required for certification, the content of those submissions shall not be a determining factor in the awarding of certification to this Standard.

4.11.1 GHGE Accounting

Identify the sources of Scope 1 & 2 GHGE associated with all supply chain activities and processes from original producer through to final product manufacturing. See Annex B Section B.3.1 for more details.

4.11.2 Displacement Credit

Identify the “most similar” virgin ingredient or ingredient-system that would be replaced by the Input(s) within the product seeking the designation of certified UI, Less Than PUI, or PUI (Ex: spent grains replacing oats in a granola bar). See Annex B Section B.3.2 for more details.

4.11.3 Additional Questions for Submission

- 1) Description of how a product seeking a designation of certified UI or PUI aligns with the framing of upcycled ingredients as value-added within the Definition of Upcycled Food⁵.
- 2) Description of how the Applicant/ Operator is considering their upcycling process in the context of GHGE.
- 3) Description of any measures the Applicant/ Operator is taking to improve the social and environmental impacts that result from processing or producing UIs or PUIs.
- 4) Description of the Applicant's/ Operator's vision for ensuring the UI or PUI has a positive environmental impact going forward.
- 5) Description of the Applicant's/ Operator's strategy for communicating overall benefits of UI and PUI to their customers.

4.12 Other documents as requested by the CB.

5. Request for Deviation

5.1 Any request for deviation to requirements of the Standard shall be provided in writing to the CB.

5.2 The CB in consultation with the UFA, shall consider but is not obligated to grant the request for deviation and shall not be obligated to return any portion of fees paid if the Applicant/ Operator chooses to discontinue certification as a result of the request for deviation decision.

5.3 The CB shall not be responsible for any costs incurred by Applicant/ Operator related to nonconforming product which is the subject of rejected deviation request or other noncompliance.

5.4 To apply for a deviation, the Applicant/ Operator shall complete the request for deviation – Upcycled Certification Program form and submit to CB. Fees may apply as per the fee schedule for CB services.

5.5 Requested variances, in instances of Force Majeure, shall be considered on a case by case basis. Operators shall provide a written request to the CB documenting the situation and proposed course of action for approval.

5.6 The CB, in consultation with the UFA, shall produce a written response back to the Applicant/ Operator regarding the request for deviation within 10 business days.

6. Requirements of the Upcycled Food Association

6.1 Review of the Upcycled Certification Standard

Standard requirements review will take place periodically and any changes in requirements shall be communicated to the CB's within 30 days of finalized changes with an effective date no sooner than 90 days from the notification date. This review includes, but is not limited to the facilitation of public comment, document revisions, publishing and notification of changes to the CBs to subsequently incorporate into certification requirements.

6.2 UFA Data Obligations

Without prejudice to the other provisions of the Standard, UFA shall take all reasonable precautions to preserve the integrity and prevent any corruption or loss, damage, or destruction of the data such as but not limited to brand names, product names, status of certification, which is subject to this Standard.

6.3 Marketing and Promotion of the Standard

UFA shall market the Upcycled Certification Program via website(s), media, social media platforms, and other methods of communication in order to educate consumers, retailers, distributors, producers, and other stakeholders and promote its wide adoption and use. UFA shall maintain an online database of certified brands and products.

6.4 Trademark Registration and Maintenance

UFA shall register and maintain trademarks associated with the Upcycled Certification Program.

6.5 Oversight, Onboarding, Training, and Calibration of CBs

UFA shall be responsible for the appointment, onboarding, initial training, calibration, and general oversight of all CB's licensed and approved to assess and determine whether a system, Input, ingredient, or product fulfills the requirements within the Standard.

6.6 CB Appointment and Scope

UFA selects and approves CB's according to a rigorous process that shall include an initial assessment of the CB's demonstrated proficiency as a certifier for other programs. CB contracts are offered at the UFA's discretion and contain provisions including, but not limited to, administration of the Standard, industry sector competency, data access, collection of fees from Applicants/ Operators, reporting, quality of service, confidentiality and quality control.

6.7 CB Guidance

A central process is the issuance of CB Guidance related to interpretation of the Standard in an effort to ensure the Standard is applied consistently across all Applicants/ Operators. CB Guidance is issued at the discretion of UFA through a process that may include input from the UFA Board and/or the Standards Committee.

6.8 Fee Collection

The UFA shall collect any applicable fees including but not limited to the product license fees from the CB and/ or Applicant/ Operator.

6.9 CB Audit

UFA reserves the right to conduct announced or unannounced audits of the CB(s) to ensure their ongoing compliance with this Standard.

7. Requirements of the Certification Body

7.1 Conflicts of Interest

The CB shall have no commercial, financial, or other conflicts of interest that could potentially compromise their status as an impartial third party suitable to determine compliance with this Standard. The CB shall

identify risks to impartiality on an ongoing basis and demonstrate how it eliminates/ reduces those ongoing risks.

7.2 Impartiality

The CB shall make services available to all eligible Applicants/ Operators. CB policies and procedures shall not be used to impede or inhibit access by applicants and access shall not be conditional based upon Applicant/ Operator size or membership in any organization including the UFA. The CB may decline an application for certification in the event of conflict with CB policies or capacity to service the Applicant/ Operator, if the Applicant/ Operator operates within one of the areas identified as ineligible for certification as outlined in Section 1.2, or if the Applicant/ Operator fails to meet the requirements of the Standard.

7.3 Training

The CB shall identify training requirements for each criteria contained within the Standard in an effort to ensure competency and apply uniform procedures for training and performance monitoring of auditors and other technical staff.

7.4 Assuring Applicant/ Operator Compliance

The CB shall follow the procedures outlined in Section 9 and any relevant contracts or agreements external to the Standard such as but not limited to CB service agreements and Applicant/ Operator license agreements for issuing notices of noncompliance to Applicant/ Operators due to any non-conformities with the Standard.

7.5 Confidentiality

The CB shall apply uniform procedures and transparent policies to maintain the confidentiality of Applicant/ Operator recipes, formulations, and other intellectual property.

7.6 Customer Interface

The CB shall be responsible for engaging with the Applicant/ Operator in all matters pertaining to the Standard including but not limited to clarification of requirements of the Standard, compliance as outlined in Section 9 and labeling considerations as outlined in Section 10 and Annex A: Brand Guideline.

7.7 Inspection of Harvest Operations, Processing, or Other Facilities

The CB shall conduct an onsite, virtual, or desk audit to verify the processes and procedures required within the Standard. The Applicant/ Operator shall permit the use of teleconference and remote inspection technology to permit virtual access to the site by the authorized CB. These technologies may include but are not limited to secure live-stream camera or recorded video, video conferencing platforms, and/or photographs, and secure file-sharing cloud platforms.

The CB may identify an appropriate risk analysis or random selection process for the number of fields, processing lines to observe, etc., to verify compliance.

7.8 Technical Review

The CB shall conduct a technical review of audit reports, documents and records, and any other documentation as required by this Standard to determine the degree of compliance and any required corrective measures.

7.9 CB Data Obligations

Without prejudice to the other provisions of the Standard, CB shall take precautions to preserve the integrity and prevent any corruption or loss, damage or destruction of the data, which is collected in accordance with this Standard.

7.10 Information Sharing with UFA

CB shall provide Applicant/ Operator information to the UFA as requested. See Section 6.2.

7.11 Standard Requirements Update

Any changes in requirements shall be communicated to the Applicants/ Operators within 30 days of finalized changes with an effective date no sooner than 90 days from the notification date.

7.12 Decision on Certification and Collection of Fees for Service.

7.12.1 The CB shall verify the responses are adequate and if so, approve the Applicant for certification or the Operator for renewal.

7.12.2 Upon approval, the CB shall provide:

- 1) A letter of notification of certification to the Applicant/ Operator with the listed certified UIs, Less Than PUIs, or PUIs approved for certification.
- 2) Notification to the UFA that the Applicant/ Operator has been approved for certification with the listed certified UIs, Less Than PUIs, or PUIs.
- 3) A certificate stating the respective certified UI, Less Than PUI, and/ or PUI is “Certified under the Upcycled Certification Program by (CB name),” and including but not limited to the certificate number, name of the certified Operator, lists of certified UIs, Less Than PUIs, and/ or PUIs, facility location, and effective date.

7.12.3 The CB shall collect the applicable fees for certification service from the Applicant/ Operator.

7.12.4 The CB may choose to withhold the certificate until the fees have been paid by the Applicant/ Operator. The applicant is subject to denial of certification or suspension for failure to pay fees.

7.13 The CB shall be responsible for reviewing all packaging and marketing materials prior to an Applicant/ Operator using the certification Mark and/or label claim to ensure compliance with the Brand Guideline, but neither the CB, nor UFA shall be liable for any other elements of the packaging or marketing materials (packaging, marketing claims, labeling requirement, etc...).

7.14 UFA reserves the right to require CBs perform additional duties to ensure Applicant/ Operators are in compliance with the requirements of the Standard.

7.15 The CB is compliant with/accredited to ISO 17065¹³ for a comparable scheme in the food & feed sector (Ex: Organic, Vegan, GFSI recognised standards.)

8. Complaint Handling

8.1 Applicants/ Operators shall have in place documented policies and procedures to handle complaints related to products with a designation of certified UI, Less Than PUI, or PUI.

8.2 The Applicant/ Operator shall maintain records of complaints and actions taken.

8.3 Complaints shall be kept on file for a period of three (3) years and available during inspection at each production location.

9. Corrective Action and Withdrawal or Suspension of Certification

9.1 Corrective Action

The CB shall evaluate submitted documents included but limited to reports, products, labels, documents and records for conformance with the Standard. In the event the CB detects any unapproved deviation, variance, or non-conformity in the certified UI, Less Than PUI, or PUI from Standard requirements, or improper or unauthorized use of the Mark, label claim, or UFA name, CB shall notify the Operator in writing and require the Operator, at its own expense, to undertake corrective action to ensure that the certified UI, Less Than PUI, or PUI complies with Standard requirements. The Operator shall have 30 days to submit corrections, corrective actions, and evidence of implementation to the CB.

9.1.1 Failure to Comply

Upon Applicant/ Operator failure to comply with any of the requirements of this Standard, or failure to undertake corrective action to the CB's satisfaction, CB may issue a letter of suspension which shall notify the Operator of the nature of the failure and the period of suspension of the Operator's right of Labeling, if applicable. A reinstatement fee may be applied. In the event the Operator fails to take corrective action to

resolve the cause of suspension, the License Agreement shall be terminated. An Applicant/ Operator may re-apply after corrective action mitigation obligations have been satisfied.

9.1.2 Public Notice

In the event the CB has confirmed evidence that a certified UI, Less Than PUI, or PUI in the marketplace has a continued non-conformity, CB shall contact the Operator and act in support of corrective/ remedial steps taken by the Operator to address the non-conformity, including, if necessary, public notification and/or a product recall undertaken by the Operator. In the event the Operator does not take action to address a significant non-conformity related to the certified UI, Less Than PUI, or PUI, UFA reserves the right to contact appropriate government agencies, other parties in the supply chain, and/or issue public notifications advising of the non-conformity.

9.2 Withdrawal or Suspension of Certification

9.2.1 Once an Applicant has achieved certification, the Operator shall maintain its programs to ensure continuing compliance with the requirements of certification.

9.2.2 An Operator may withdraw from certification at any time, but shall be responsible for payment of any fees due to a CB or the UFA, and shall maintain compliance with the applicable terms of any service or license agreements which remain in effect.

9.2.3 A CB may suspend certification of a certified UI, Less Than PUI, or PUI if it deems the Operator has failed to maintain compliance or is otherwise in violation of the terms of the Standard.

9.2.4 If an Applicant/ Operator chooses to withdraw a certified UI, Less Than PUI, or PUI from certification or from seeking certification, or if an Operator's certification is suspended by the CB, the Applicant/ Operator must notify the authorized CB in writing of the request to withdraw and where applicable, shall cease use of the certification Mark and/ or label claim, and cease representing its products as certified on the effective date of withdrawal.

9.2.5 UFA and/or CB shall not be responsible for any costs incurred by Applicants/ Operators related to the printed labels which are the subject of rejected variance requests or other certified UI, Less Than PUI, or PUI noncompliance. It is the Applicant's/Operator's responsibility to ensure they have received written confirmation of label compliance from CB, or any applicable regulatory body or agency, prior to printing labels, using the Mark, or making label claims associated with the Standard.

10. Labeling

10.1 Upcycled Certification Mark

10.1.1 The Mark shall receive no alteration to color or design format.

10.1.2 If the Mark is placed against a background that would inhibit identifying the Mark, an altered background design shall be required to ensure clear visibility. Please see Annex A: Brand Guide for visual examples.

10.1.3 For permissible colors see Annex A: Brand Guideline. In all cases the Mark shall be from the original design files provided by the CB.

10.1.4 All packaging and marketing materials shall be submitted to the CB for approval prior to using the certification Mark and/or label claim.

10.2 Labeling Requirements for Certified UIs

Certified UIs shall display the Mark and the language "Certified Upcycled" on spec sheets and other documentation necessary for further sale of the certified UI. Operators with certified UIs may promote their certification status on their website and other promotional materials.

Note: In accordance with Section 3.25, a certified UI shall not be sold as a consumer facing product. If a certified UI may also be a consumer facing product, it shall be dual-certified as a certified UI and PUI.

10.3 Labeling Requirements for Certified PUIs

10.3.1 Certified PUIs shall identify which ingredients are upcycled in the Ingredient List on final packaging. This can be identified by:

- 1) Indication mark (Ex.: Bananas* , * = upcycled)
- 2) Ingredient name (Ex.: “upcycled bananas”)
- 3) In the event an Applicant/ Operator uses both upcycled ingredients and non-upcycled ingredients that are otherwise identical (Ex: a pot pie containing upcycled broccoli florets and non-upcycled broccoli florets, an indication mark (^ or other) shall accompany the ingredient, noting elsewhere on packaging that the PUI contains both upcycled ingredients and non-upcycled ingredients (Ex.: “^contains both upcycled and non-upcycled broccoli”).

Note: If use of the term "upcycled" is not allowed in the Ingredient List by a regulatory body, language elsewhere on the label shall be used to identify which ingredients are upcycled.

10.3.2 Certified PUIs meeting or exceeding the minimum $\geq 10\%$ upcycled ingredient content by weight or tonnage diverted as a result of yearly production thresholds may:

- 1) Use the Upcycled Certification Mark in accordance with Section 10 and Annex A: Brand Guideline.
- 2) Use the label claim “Certified made with Upcycled X, Y, Z” where “X, Y, Z” are ingredient(s) that individually constitute $\geq 85\%$ of the total weight of that specific ingredient within the product in accordance with Section 4 (Ex: 95% of all broccoli within a pot pie is upcycled broccoli).

Note: To ensure Applicant/ Operators meet or exceed this minimum 85% threshold, they should consider formulating with greater than 85% upcycled ingredient to accommodate for any supply chain fluctuations.

- 3) Use additional language on package and in promotional materials, as described in Section 7.13 and Annex A: Brand Guideline.

10.3.3 Less Than PUIs (products that do not meet or exceed the minimum $\geq 10\%$ upcycled ingredient content by weight or tonnage diverted as a result of yearly production):

- 1) May use the Upcycled Certification Mark on the back of pack in accordance with the placement and size restrictions outlined in the Annex A: Brand Guideline.
- 2) Shall not use romance language to refer to any upcycled ingredients within the Less Than PUI.

10.4 Operators participating in the Upcycled Certification choosing to display the certification Mark shall follow the requirements within this section, those described in Section 7.13 and Annex A: Brand Guideline.

10.5 Labeling claims and accompanying romance language must be accurate, truthful, and not mislead the consumer about the upcycled ingredient content of the certified UI, Less Than PUI, or PUI and are subject to requirements within this section, those described in Section 7.13, Annex A: Brand Guideline, and applicable law. Any certified PUI that bears a claim regarding the “Upcycled Certification” on its label and fails to comply with the program requirements shall be issued a Non-Compliance and subject to the non-compliance procedures outlined in Section 9 and any contracts external to the Standard. Applicant/ Operator may also be subject to liability under state and federal false advertising, unfair competition, and unfair and deceptive acts and practices (UDA) laws or other local, state, or national laws or regulations.

Note: The extent of the label claim review shall be limited to claims outlined by this Standard.

10.6 Use of the Mark is contingent on operators being compliant and certified to the requirements of this Standard. Any Operator found to be misusing the mark shall be issued a Non-Compliance and subject to the non-compliance procedures outlined in Section 9 and any contracts external to the Standard.

10.7 If an Applicant/ Operator wishes to request a deviation to the permitted use of the Mark or label claim, the Applicant/ Operator shall submit the request in accordance with Section 5.

10.8 Custom design or sizing requests or elements not covered in the Standard or Brand Guideline shall be subject to the pre-approval of the CB and/ or UFA.

Annex A: Brand Guideline

Upon publication of the Upcycled Certification Standard - Version 1, the Certification Mark and Brand Guideline were not complete. An addendum of the Upcycled Certification Standard including this Annex will be published upon its completion.

Annex B: GHGE Accounting (Normative)

The purpose of this section is to gather information for potential future requirement inclusion in this Standard. While submitting documentation clarified by this Annex and outlined in Sections 4.11.1 and 4.11.2 is required for certification, the content of those submissions shall not be a determining factor in the awarding of certification to this Standard.

B.1 Overview

In alignment with the definition of upcycled food, certified UIs and PUIs must have a positive impact on the environment. Long term, GHGE will likely be used as an overarching proxy metric of environmental impact in addition to the weight of Inputs diverted. The assessment required of Applicants/ Operators is based on a credit-debit-credit approach. This accounts for:

- 1) The benefit the Applicant/ Operator provides by diverting food waste for use as certified UI or PUI (credit);
- 2) The emissions created by transporting and processing (debit); and
- 3) The benefit provided by displacing the use of “most similar” virgin ingredient (credit).

A certified UI or PUI should emit fewer net GHGE than a similar ingredient or product made with non-upcycled ingredients.

B.2 Scope and Timeline

GHGE accounting and reporting may not be common practice in the food industry and reporting may create a barrier-to-entry for Applicants/ Operators without the resources to conduct a full GHGE analysis. Therefore, current reporting requirements are largely qualitative and informative in nature. Future iterations of the Standard will require quantitative metrics and calculation. At that time, Applicants/ Operators will be provided a database of relevant emissions factors that can be used to convert activity data into GHGE unless they have the capacity to directly measure GHGE's from their operations. The implementation date of quantitative GHGE measurement requirements is dependent upon the timing and success of education and advocacy efforts along with industry readiness.

B.3 Current Reporting Requirements

B.3.1 GHGE Accounting for Scope 1 and 2 Sources

Upon application, Applicants/ Operators shall provide information related to the Scope 1 and Scope 2 GHGE¹⁴ associated with production processes for the specific product seeking a designation of certified UI, Less Than PUI, or PUI. This includes but is not limited to:

- 1) Identifying and recording all supply chain activities from the original producer through to final product manufacturing (Examples provided in Table B.1).
- 2) Identifying and recording the sources of GHGEs from these activities (Examples provided in Table B.1).
- 3) Identifying potential sources of activity data for future measurement of GHGE from these activities (Examples provided in Table B.1).

Note: Definitions of Scope 1 and 2 GHGE

- 1) Scope 1 GHGE: Direct GHG emissions occur from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment.
- 2) Scope 2 GHGE: Scope 2 accounts for GHG emissions from the generation of purchased electricity consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated.

Most of the activity data may be found within utility bills, invoices for activities such as transportation, and other receipts. Data may be recorded monthly, and yearly average shall be reported to CB. Common sources of GHGE within food manufacturing, associated activities, and sources of those data are below (this list is not exhaustive):

Table B.1 Common Sources of GHGE Within Food Manufacturing, Associated Supply Chain Activities, and Sources of Data

| Scope | Activity | GHGE Source | Source of Data | Possessor of Data |
|------------------------------|--|---|---|--|
| Scope 1 - direct emissions | Collecting and distributing materials/products (forklift, transport, etc.) | <ul style="list-style-type: none"> Natural gas Fuel | <ul style="list-style-type: none"> Total kilowatt hours (kWh) used from gas bills Liters of fuel purchased from invoices and receipts; or vehicle mileage from vehicle log books or odometers | <ul style="list-style-type: none"> Applicant/ Operator Building manager Co-packer Contractor |
| | Processing (Ex: heating, drying) | <ul style="list-style-type: none"> Natural gas Fuel | <ul style="list-style-type: none"> Total kilowatt hours (kWh) used from gas bills Liters of fuel purchased from invoices and receipts; or vehicle mileage from vehicle log books or odometers | <ul style="list-style-type: none"> Applicant/ Operator Building manager Co-packer Contractor |
| Scope 2 - indirect emissions | Processing (Ex: moving, mixing, packing) | <ul style="list-style-type: none"> Purchased electricity | <ul style="list-style-type: none"> Total kilowatt hours (kWh) used from electricity bills | <ul style="list-style-type: none"> Applicant/ Operator Building manager Co-packer Contractor |

B.3.2 Identification of the “Most Similar” Virgin Ingredient (Displacement Credit)

The displacement credit recognizes that the utilization of an upcycled ingredient potentially provides an environmental benefit by reducing demand for virgin ingredients or ingredient systems (as in some cases the upcycled ingredient might replace multiple ingredients within a product). Identification of the “most similar” virgin ingredient will help to further develop this portion for future iterations of the Standard. When identifying the “most similar” virgin ingredient for a product seeking the designation of certified UI, Less Than PUI, or PUI (Ex.: spent grains replacing oats in a granola bar) Applicants/ Operators should consider attributes such as ingredient function, ingredient or product type, nutrient content, and sensory attributes such as taste, texture, or appearance. See Table B.2 for further examples.

Table B.2 Examples of Upcycled Ingredients and their “Most Similar” Virgin Ingredient

| Product | Ingredient | Most Similar “Virgin Ingredient” | Attributes Considered |
|--------------------|---|---|---|
| Pancake Mix | Spent Grain from Brewing (Previously Composted) | Whole Wheat Flour | <ul style="list-style-type: none"> ● Product Type ● Ingredient Function ● Nutrient Content ● Taste ● Texture ● Appearance |
| Dog Treats | Carrot Pomace from Juicing (Previously Composted) | Whole Carrots | <ul style="list-style-type: none"> ● Product Type ● Ingredient Function ● Nutrient Content ● Taste ● Texture ● Appearance |
| Pepper Jack Cheese | Out of Spec. Habanero Peppers (Previously Not Harvested) | Within Spec. Habanero Peppers | <ul style="list-style-type: none"> ● Product Type ● Ingredient Function ● Nutrient Content ● Taste ● Texture ● Appearance |
| Facial Scrub | Ground Almond Shell (Previously Landfilled) | Corn Kernel Meal | <ul style="list-style-type: none"> ● Product Type ● Ingredient Function ● Texture ● Appearance |